

12 KAR 4:110. Terms and definitions.

RELATES TO: KRS 250.406

STATUTORY AUTHORITY: KRS 250.421

NECESSITY, FUNCTION, AND CONFORMITY: To utilize standard terms and definitions which reduces regulatory problems for companies selling fertilizer in Kentucky and other states.

Section 1. Definitions. (1) "Acid-forming fertilizer" means a fertilizer capable of increasing the residual acidity of soil.

(2) "Acidulated bone" means a fertilizer made from ground bone or bone meal that has been treated with sulfuric acid.

(3) "Acidulated fish tankage" means a fertilizer that is derived from rendered fish or fish scrap treated with sulfuric acid.

(4) "Activated sewage" means a fertilizer made from sewage freed from grit and coarse solids and aerated after being inoculated with microorganisms. The resulting flocculated organic matter is withdrawn from the tanks, filtered with or without the aid of coagulants, dried, ground and screened.

(5) "Ammoniated superphosphate" means a fertilizer obtained when superphosphate is treated with ammonia or with solutions which contain ammonia and other compounds of nitrogen. The guaranteed percentages of nitrogen and of available phosphate shall be stated as part of the name.

(6) "Ammonium nitrate" means a fertilizer that is chiefly the ammonium salt of nitric acid. It shall contain not less than thirty-three (33) percent nitrogen, one-half (1/2) of which is in the ammonium form and one-half (1/2) in the nitrate form.

(7) "Ammonium phosphate (fertilizer grade)" means a fertilizer obtained when phosphoric acid is treated with ammonia (anhydrous or aqueous), and consists principally of monoammonium phosphate and diammonium phosphate or a mixture of these two (2) salts. The guaranteed percentage of nitrogen and of available phosphate shall be stated as part of the name.

(8) "Ammonium phosphate-sulfate (fertilizer grade)" means a fertilizer obtained when a mixture of phosphoric acid and sulfuric acid is treated with ammonia. It consists principally of a mixture of ammonium phosphate and ammonium sulfate. The guaranteed percentages of nitrogen and of available phosphate shall be stated as a part of the name.

(9) "Ammonium sulfate nitrate" means a fertilizer that is a double salt of ammonium sulfate and ammonium nitrate which are present in equal molecular proportions. It shall contain not less than twenty-six (26) percent nitrogen, one-fourth (1/4) of which is in the nitrate form and three-fourths (3/4) in the ammonium form.

(10) "Ammonium thiosulfate (fertilizer grade)" means a commercial fertilizer composed principally of $(\text{NH}_4)_2\text{S}_2\text{O}_3$. The guaranteed percentages of nitrogen and sulfur shall be stated as part of the name.

(11) "Animal manure" means a fertilizer derived from the excreta of animals together with whatever bedding materials are needed to follow good dairy barn, feed lot, poultry house, etc., practice in order to maintain proper sanitary conditions.

(12) "Available phosphate" means the sum of the water soluble and the citratesoluble phosphate in a fertilizer.

(13) "Basic lime phosphate (lime-based superphosphate)" means a superphosphate to which liming materials have been added at least six (6) percent in excess of the quantity required to convert all water soluble phosphate to the citratesoluble form.

(14) "Basic phosphate slag" means a fertilizer that is a by-product obtained in the manufacture of steel from phosphatic iron ores. The product shall:

(a) Contain no admixture of materials other than those resulting from the original process of manufacture;

(b) Contain not less than twelve (12) percent total phosphate of which at least eighty (80) percent shall be available phosphate; and

(c) Be ground so that not less than ninety (90) percent passes through a U.S. Standard No. 50 sieve (300 um opening) and seventy (70) percent of the material passes through a U.S. Standard No. 100 sieve (150 um opening). Any basic phosphate slag not conforming to this definition shall be designated low phosphate.

(15) "Bat guano" means partially decomposed bat manure.

(16) "Calcined phosphate" means a fertilizer made from phosphate rock which has been heated, with or without one (1) or more catalysts or reagents, sufficient to volatilize and remove most or all organic, carbonate, fluoride and other impurities, and/or thermally altered to more available calcium phosphate compounds, depending on the process. Included are compounds known as fused tricalcium phosphate, defluorinated phosphate, rhenania phosphate and various trade names. A significant portion of the phosphate is citrate soluble and such percentage shall be stated as part of the brand name.

(17) "Calcium metaphosphate" means a fertilizer that is a vitreous product substantially free from crystalline phosphates, resulting from the treatment of phosphate rock with gaseous phosphorus pentoxide at high temperatures. The guaranteed percentage of available phosphate shall be stated as part of the name.

(18) "Calcium nitrate" means a fertilizer that is chiefly the calcium salt of nitric acid. It shall contain not less than fifteen (15) percent nitrate nitrogen.

(19) "Chelate" means the type of compound or chemical union in which a central metallic ion is joined to a chelating agent in the same molecule by two (2) or more bonds. Such linkages result in the formation of one (1) or more heterocyclic rings in which the metal is part of the ring.

(20) "Chelated plant nutrients" means metallic secondary nutrients and micronutrients which have reacted with chelating agents and have the property of being available under pH conditions in which the nutrients normally form insoluble compounds.

(21) "Chelating agent" means a compound having two (2) or more sites of attachment to a metallic ion to form a chelate. Examples are EDTA (ethylenediaminetetraacetic acid), NTA (nitrilo-triacetic acid), polyphosphoric acid, proteins and polyflavonoids.

(22) "Citrate-soluble phosphate" means that part of the total phosphate in a fertilizer that is insoluble in water but soluble in a solution of citrate of ammonia according to AOAC International Method 960.01.

(23) "Coated slow release fertilizer" means a fertilizer containing sources of water soluble nutrients, release of which in the soil is controlled by a coating applied to the fertilizer.

(24) "Compost" means a biologically stable material derived from the composting process.

(25) "Composting" means the biological decomposition of organic matter which may be accomplished by mixing and piling in such a way to promote aerobic and/or anaerobic decay. The process inhibits pathogens, viable weed seeds, and odors.

(26) "Continuous liquid feed" means the external application of water soluble nutrients in the irrigation water every time the plant requires water.

(27) "Crude, inert, or slow-acting nitrogenous materials" means low value fertilizers made from unprocessed organic substances relatively high in nitrogen but having nitrogen activity indexes of less than fifty (50) percent by the alkaline (AOAC International Method 920.07) and less than eighty (80) percent by the neutral (AOAC International Method 920.06) permanganate methods.

(28) "Cyanamide" means a commercial product consisting principally of calcium cyanamide (CaNCN) and carbon and it shall contain not less than nineteen and five-tenths (19.5) percent nitrogen.

(29) "DAP (fertilizer grade)" means a fertilizer composed of ammonium phosphates, principally diammonium phosphate, resulting from the ammoniation of phosphoric acid. It may contain up to

two (2) percent nonammoniacal nitrogen. The guaranteed percentage of nitrogen and available phosphate shall be stated as part of the name.

(30) "Dicalcium phosphate" means a manufactured fertilizer consisting chiefly of dicalcic salt of phosphoric acid.

(31) "Dicyanodiamide (cyanoguanidine)" means a fertilizer that is a water soluble organic compound of formula $C_2N_4H_4$ which contains at least sixty-five (65) percent nitrogen. It is a source of slowly available nitrogen.

(32) "Dimethylenetriurea (DMTU)" means a fertilizer that is a water soluble condensation product resulting from the reaction of two (2) molecules of formaldehyde with three (3) molecules of urea, with the elimination of two (2) molecules of water. It has a minimum total nitrogen content of forty-one (41) percent and is a source of slowly available nitrogen.

(33) "Double sulfate of potash and magnesia (langbeinite)" means a fertilizer containing not less than twenty-one (21) percent soluble potash (K_2O) nor less than fifty-three (53) percent sulfate of magnesia and not more than two and one-half (2.5) percent chlorine.

(34) "Dried blood" means a fertilizer that is the collected blood of slaughtered animals, dried and ground and containing not less than twelve (12) percent nitrogen.

(35) "Fertilizer formula" means the quantity and analysis of the crude stock materials used in making a mixed fertilizer.

(36) "Filler" means any substance added to fertilizer materials to provide bulk, prevent caking or serve some purpose other than providing essential plant nutrients.

(37) "Fish tankage" means a fertilizer derived from dried, ground, rendered or unrendered whole fish or fish scrap.

(38) "Garbage tankage" means the rendered, dried and ground product derived from waste household food materials.

(39) "Granular fertilizer" means a fertilizer in which ninety-five (95) percent or more of the product is retained on a series of sieves within the range of U.S. No. 4 (4.75 mm opening) to and including U.S. No. 20 (0.850 mm opening) and in which the largest particle passes through a sieve having an opening not larger than four (4) times that of the sieve which retains ninety-five (95) percent or more of the product.

(40) "Ground raw bone" means a fertilizer made from ground animal bones that have not been previously steamed under pressure, heated, or otherwise manipulated.

(41) "Ground sterilized bone" means a fertilizer made from ground animal bones or bone meal that have been previously steamed under pressure, heated, or rendered sterile in some other acceptable manner.

(42) "Hoof and horn meal" means a fertilizer derived from processed dried and ground hoofs and horns.

(43) "Hydroponics" means a system in which water soluble nutrients are placed in intimate contact with the plant's root system, being grown in an inert supportive medium which supplies physical support for the roots but which does not add or subtract plant nutrients.

(44) "Isobutylidene diurea" means a fertilizer that is the condensation product of isobutyraldehyde and urea having a minimum total nitrogen content of thirty (30) percent. It is a source of slowly available nitrogen by virtue of particle size, solubility decreasing with increase in particle size. Material conforming to the description of a "granular fertilizer" will have ninety (90) percent of its nitrogen content in the water insoluble form prior to grinding as tested by AOAC International Method 945.01.

(45) "Kainit" means a fertilizer that is a potash salt containing potassium and sodium chlorides and sometimes sulfate of magnesia with not less than twelve (12) percent soluble potash (K_2O).

(46) "Kelp (seaweed)" means a fertilizer derived from the dried marine algae of the botanical divisions of Rhodophyta (red algae), Phaeophyta (brown algae), and Chlorophyta (green algae).

(47) "Liquid fertilizer" means a fluid fertilizer in which the plant nutrients are in true solution.

(48) "Magnesium sulfate" means a fertilizer consisting chiefly of the chemical compound, magnesium sulfate, with or without combined water, such as, epsom salts ($\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$), kieserite ($\text{MgSO}_4 \cdot \text{H}_2\text{O}$) and calcined kieserite (MgSO_4).

(49) "Manganese sulfate" means a fertilizer consisting of anhydrous manganese sulfate (MnSO_4).

(50) "Manipulation" means processed or treated in any manner, including drying to a moisture content of less than thirty (30) percent, composting, bagging, leaching, pelleting, dissolution and re-crystallization.

(51) "MAP (fertilizer grade)" means a fertilizer composed of ammonium phosphates, principally monoammonium phosphate, resulting from the ammoniation of phosphoric acid. The guaranteed percentage of nitrogen and available phosphate shall be stated as part of the name.

(52) "Melamine" means a fertilizer that is a sparingly soluble organic compound of formula $\text{C}_3\text{H}_6\text{N}_6$ which contains at least sixty-six (66) percent nitrogen. (CAS No. 10878-1 2,4,6 triamino-1,3,5-triazine, triamino-s-triazine).

(53) "Methylenediurea (MDU)" means a fertilizer that is a water soluble condensation product resulting from the reaction of one (1) molecule of formaldehyde with two (2) molecules of urea, with the elimination of one (1) molecule of water. It has a minimum total nitrogen content of forty-two (42) percent and is a source of slowly available nitrogen.

(54) "Micronutrients" means the essential plants nutrients of boron, chlorine, cobalt, copper, iron, manganese, molybdenum, sodium and zinc.

(55) "Mine run potash salts" means fertilizers that are potash salts containing a high percentage of chloride and from twenty (20) percent to thirty (30) percent soluble potash (K_2O).

(56) "Muriate of potash (commercial potassium chloride)" means a fertilizer that contains forty-eight (48) percent to sixty-two (62) percent soluble potash (K_2O) chiefly as chloride.

(57) "Natural base fertilizer" means a mixed fertilizer where more than half of the fertilizer materials is natural and where more than half of the sum of the guaranteed primary nutrient percentages is derived from natural materials.

(58) "Natural fertilizer" means a fertilizer composed only of natural organic and/or natural inorganic fertilizer materials and natural fillers.

(59) "Natural inorganic fertilizer" means a mineral nutrient source that exists in or is produced by nature and may be altered from its original state only by physical manipulation.

(60) "Natural organic fertilizers" means organic fertilizers derived from either plant or animal products. These fertilizers:

(a) May be subjected to biological degradation processes under normal conditions of aging, rainfall, sun-curing, air-drying, composting, rotting, enzymatic, or anaerobic/aerobic bacterial action, or any combination of these; and

(b) Shall not be mixed with synthetic materials or changed in any physical or chemical manner from their initial state except by manipulations such as drying, cooking, chopping, grinding, shredding, hydrolysis, or pelleting.

(61) "Nitrate of potash or potassium nitrate" means a fertilizer that is chiefly the potassium salt of nitric acid. It shall contain not less than twelve (12) percent nitrogen and forty-four (44) percent soluble potash.

(62) "Nitrate of soda or sodium nitrate" means a fertilizer that is chiefly the sodium salt of nitric acid. It shall contain not less than sixteen (16) percent nitrate nitrogen and twenty-six (26) percent sodium.

(63) "Nitrate of soda potash or sodium and potassium nitrate" means a fertilizer that is chiefly the sodium and potassium salts of nitric acid. It shall contain not less than fifteen (15) percent nitrate nitrogen, ten (10) percent soluble potash and eighteen (18) percent sodium.

(64) "Nitrogen stabilizer" means a substance added to a fertilizer which extends the time the nitrogen component of the fertilizer remains in the soil in the ammoniacal form.

(65) "Nitrophosphate" means a fertilizer obtained by acidulation of phosphate rock with nitric acid resulting in a complex mixture of nitrates and phosphates that does not contain nitrate nitrogen and phosphorus in the same molecule. The process is subject to modifications designed to remove the hygroscopic calcium nitrate formed such as ammoniation, physical separation, coacidulation with sulfuric or phosphoric acids, or subsequent treatment with carbon dioxide.

(66) "Nonacid-forming fertilizer" means a fertilizer that is not capable of increasing the residual acidity of the soil.

(67) "Organic base fertilizer" means a mixed fertilizer where more than half of the fertilizer materials is organic and where more than half of the sum of the guaranteed primary nutrient percentages is derived from organic materials.

(68) "Organic fertilizer" means a fertilizer containing carbon combined covalently with one (1) or more elements essential for plant growth other than hydrogen and oxygen.

(69) "Oxamide (fertilizer grade)" means a fertilizer that is the diamide of oxalic acid of the formula $C_2H_4N_2O_2$ which contains twenty-eight (28) to thirty-two (32) percent nitrogen. It is a source of slowly available nitrogen.

(70) "Peat" means the partly decayed vegetable matter of natural occurrence. It is composed chiefly of organic matter that contains some nitrogen of low activity.

(71) "Pelletized fertilizer" means a fertilizer whose physical form is uniform in size and usually of globular shape containing one (1) or more nutrients produced by one (1) of several methods including:

- (a) Solidification of a melt while falling through a countercurrent stream of air;
- (b) Dried layers of slurry applied to recycling particles;
- (c) Compaction;
- (d) Extrusion; and
- (e) Granulation.

(72) "Phosphate" means the phosphorus in a fertilizer that is designated and guaranteed as equivalent to phosphorus pentoxide (P_2O_5).

(73) "Phosphate rock" means a natural rock containing one (1) or more calcium phosphate minerals of sufficient purity and quantity to permit its use, either directly or after concentration, in the manufacture of commercial fertilizers.

(74) "Polymer coated fertilizer" means a coated slow release fertilizer consisting of fertilizer particles coated with a polymer (plastic) resin and is a source of slowly available plant nutrient(s).

(75) "Polymer coated urea (PCU)" means a coated slow release fertilizer consisting of urea particles coated with a polymer (plastic) resin. It typically contains about forty (40) percent nitrogen and is a source of slowly available nitrogen.

(76) "Polyphosphates" means a general class of phosphatic fertilizers made from the salts of any of a series of polyphosphoric acids, whose molecular structure contains two (2) or more phosphorus atoms linked by oxygen. Solutions may contain several ionic species such as orthophosphates, pyrophosphates, and polyphosphates containing three (3) or more phosphorus atoms, commonly known as tripolyphosphates or tetrapolyphosphates and water.

(77) "Potash" means the potassium in a fertilizer that is designated and guaranteed as equivalent to potassium oxide (K_2O).

(78) "Potting soil" means a material suitable for holding and growing potted plants and usually made from natural materials. It may include fertilizers, pesticides and/or soil amendments.

(79) "Precipitated phosphate" means a fertilizer that consists mainly of dicalcium phosphate obtained by neutralizing with calcium hydroxide the acid solution of either phosphate rock or processed bone.

(80) "Primary nutrients" means nitrogen (N), available phosphate (P_2O_5) or phosphorus (P), and soluble potash (K_2O) or potassium (K).

(81) "Process tankage" means a fertilizer made under steam pressure from crude inert nitrogenous materials, with or without the use of acids or bases, for the purpose of increasing the activity of nitrogen. These products shall be called "process tankage" with or without further qualification and the water insoluble nitrogen shall test at least fifty (50) percent active by the alkaline permanganate method (AOAC International Method 920.07), or eighty (80) percent active by the neutral permanganate method (AOAC International Method 920.06).

(82) "Secondary nutrients" means the essential plant nutrients of calcium, magnesium, and sulfur.

(83) "Sheep manure wool waste" means a fertilizer that is the by-product from wool-carding establishments consisting chiefly of sheep manure, seeds, and wool fiber.

(84) "Slow or controlled release fertilizer" means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference "rapidly available nutrient fertilizer" such as ammonium nitrate, urea, ammonium phosphate, or potassium chloride. Such delay of initial availability or extended time of continued availability may occur by a variety of mechanisms including:

(a) Controlled water solubility of the material by semipermeable coatings, occlusion, or by inherent water insolubility of polymers, natural nitrogenous organics, protein materials, or other chemical forms;

(b) By slow hydrolysis of water soluble low molecular weight compounds; or

(c) By other unknown means.

(85) "Soft phosphate with colloidal clay" means a very finely divided, low-analysis fertilizer that is a byproduct from mining Florida rock phosphate by a hydraulic process in which the colloidal materials settle at points in artificial basins farthest from the washer, and are later removed after the natural evaporation of the water.

(86) "Slurry fertilizer" means a fluid fertilizer containing dissolved and undissolved plant nutrient materials which requires continuous mechanical agitation to assure homogeneity.

(87) "Soluble potash" means the potash contained in a fertilizer which is soluble in aqueous ammonium oxalate, aqueous ammonium citrate, or water, according to an applicable AOAC International Method.

(88) "Stabilized nitrogen fertilizer" means a fertilizer to which a nitrogen stabilizer has been added.

(89) "Sulfate of ammonia or ammonium sulfate" means a fertilizer that is chiefly the ammonium salt of sulfuric acid. It shall contain not less than twenty and five-tenths (20.5) percent nitrogen.

(90) "Sulfate of potash (commercial potassium sulfate)" means a fertilizer containing not less than forty-eight (48) percent soluble potash (K_2O), chiefly as sulfate, and not more than two and one-half (2.5) percent chlorine.

(91) "Sulfate of potash magnesia" means a fertilizer containing not less than twenty-five (25) percent soluble potash (K_2O) nor less than twenty-five (25) percent sulfate of magnesia and not more than two and one-half (2.5) percent chlorine.

(92) "Sulfur coated urea" means a coated slow release fertilizer consisting of urea particles coated with sulfur. The product is usually further coated with a sealant (two (2) percent to three (3) percent of total weight) and a conditioner (two (2) percent to three (3) percent of total weight). It typically contains about thirty (30) percent to forty (40) percent nitrogen and about ten (10) percent to thirty (30) percent sulfur.

(93) "Superphosphate" means a fertilizer that is obtained when phosphate rock is treated with either sulfuric acid, phosphoric acid, or a mixture of those acids. The guaranteed percentage of available phosphate shall be stated as a part of the name.

(94) "Superphosphoric acid" means the acid form of polyphosphates, consisting of a mixture of orthophosphoric and polyphosphoric acids. Ionic species distribution varies with concentration, typically sixty-eight (68) to eighty-three (83) percent P_2O_5 .

(95) "Suspension fertilizer" means a fluid fertilizer containing dissolved and undissolved plant nu-

trients where the undissolved plant nutrients are suspended with the aid of a nonfertilizer suspending agent or by the inherent properties of the undissolved materials. Mechanical agitation may be necessary in some cases to facilitate uniform suspension of the undissolved plant nutrients.

(96) "Synthetic" means any substance generated from another material or materials by means of a chemical reaction.

(97) "Tankage (without qualification)" means a fertilizer made from the rendered, dried, and ground by-product, largely meat and bone, from slaughtered animals or those that have otherwise died.

(98) "Triazone" means a fertilizer that is a water soluble compound of formula $C_3H_7N_3O$ which contains at least forty-one (41) percent total nitrogen. (CAS No. 709814-6, 1,3,5 triazin-2-one, tetrahydro-s-triazone)

(99) "Unit" means twenty (20) pounds of plant food or one (1) percent of a ton.

(100) "Unmanipulated" means materials not subjected to manipulation.

(101) "Urea" means a fertilizer that is the commercial synthetic acid amide of carbonic acid and it shall contain not less than forty-five (45) percent nitrogen.

(102) "Urea-formaldehyde products (sparingly soluble)" means fertilizers that are reaction products of urea and formaldehyde which:

(a) Contain less than thirty-five (35) percent total nitrogen, largely in water insoluble but slowly available form;

(b) Have not less than sixty (60) percent of the total nitrogen in water insoluble form; and

(c) Shall have activity indexes of the water insoluble nitrogen that are either:

1. Not less than forty (40) percent by the AOAC International Method 955.05 (nitrogen activity index for urea-formaldehyde products); or

2. Not less than fifty (50) percent by AOAC International Method 920.07 (alkaline permanganate) or eighty (80) percent by AOAC International Method 920.06 (neutral permanganate). They shall have the percentage of total nitrogen as part of the product name; for example: Twenty (20) percent N Urea-Formaldehyde.

(103) "Urea-formaldehyde products (water soluble)" means fertilizers that are reaction products of urea and formaldehyde which:

(a) Contain at least thirty (30) percent nitrogen, largely in water soluble form;

(b) Have some slowly available nitrogen products present;

(c) Form stable aqueous solutions; and

(d) Contain a maximum of fifty-five (55) percent free urea, with the remainder of the urea being chemically combined as methylolureas, methylolurea ethers, and/or methylenediurea (MDU) and dimethylenetriurea (DMTU).

(104) "Ureaform materials (sparingly soluble)" means fertilizers that are reaction products of urea and formaldehyde which:

(a) Contain at least thirty-five (35) percent nitrogen, largely in water insoluble but slowly available form;

(b) Have at least sixty (60) percent of the total nitrogen content in water insoluble form; and

(c) Have a water insoluble nitrogen activity index of not less than forty (40) percent when determined by AOAC International Method 955.05.

(105) "Urea-triazone solution" means a fertilizer that is a stable solution resulting from controlled reaction in aqueous medium of urea, formaldehyde, and ammonia which:

(a) Contains at least twenty-five (25) percent total nitrogen; and

(b) Shall contain no more than forty (40) percent nor less than five (5) percent of the total nitrogen from unreacted urea and not less than forty (40) percent of the total nitrogen from triazone. All other nitrogen shall be derived from water soluble, dissolved reaction products of the above reactants. It is a source of slowly available nitrogen.

(106) "Vegetable manure" means plant material that has been composted. (11 Ky.R. 511; eff. 11-13-84; Am. 12 Ky.R. 1519; eff. 4-17-86; 21 Ky.R. 453; 1023; eff. 9-28-94.)